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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,867	09/24/2003	Srikanth C. Kottilingam	2003P06418US01	5143

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EXAMINER

JIMENEZ, MARC QUEMUEL

ART UNIT PAPER NUMBER

3726

DATE MAILED: 03/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

6

Office Action Summary	Application No. 10/669,867	Applicant(s) KOTTILINGAM ET AL.	
	Examiner Marc Jimenez	Art Unit 3726	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 17-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/24/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group I, Claims 1-16 in the reply filed on 1/11/06 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claims 17-20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Drawings

3. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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5. **Claims 1-16** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites “forming a preparatory groove that extends from a surface of the component to the damaged area” in lines 4-5. This limitation is unclear because as shown in figure 1, the damaged area **16** is at the surface of the component.

Claim 1 recites “but does not extend to the cooling hole or hollow or geometrically complex portion of the component” in lines 5-6. This is inconsistent with the specification which shows in figure 2, that the groove extends to the cooling hole **14**.

Regarding claim 1, the limitation “geometrically complex portion” is vague and indefinite because it is unclear what geometrically complex encompasses. The specification does not give a clear description of what “geometrically complex” means. For example any type of shape could be both geometrically complex and not complex at the same time. The square grooves **14** could be considered to be a simple geometric shape and not a geometrically complex shape.

Claim 1 recites “the groove extending 40-90% the distance from the component to the damaged area” in lines 6-7, it is unclear what this limitation encompasses. The damaged area is part of the component, so it is unclear how the groove extends 40-90% the distance from the component to the damaged area”.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 1-16** are rejected under 35 U.S.C. 103(a) as being unpatentable over Fraser et al. (US4611744) in view of Saltzman et al. (US4878953).

Regarding claims 1, 4-7, 9-10, Fraser et al. teach a method of method of repairing a combustion turbine component having damage (col. 1, line 33 “cracking” or erosion/chip) located at or near a geometrically complex portion of the component, comprising: forming a preparatory groove **113** that extends from a surface of the component to the damaged area **111** but does not extend to the geometrically complex portion of the component, the groove **113** extending 40-90% the distance from the component to the damaged area (the distance measured from top surface of the component **110** shown in figure 10, near lead line **115** to the circular groove **112**), spraying a filler material **118** into the groove **113**, and filling the groove **113** with the filler material **118** such that the heated filler material **118** substantially extends from the geometrically complex portion of the component to a surface of the component.

Fraser et al. teach the invention cited with the exception of using a micro-plasma torch at a current of less than 50 amperes.

Saltzman et al. teach using a micro-plasma torch (col. 2, lines 10-12) at a current of less than 50 amperes (col. 2, lines 54-55).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have provided the invention of Fraser et al. with using a micro-plasma torch at a current of less than 50 amperes, in light of the teachings of Fraser et al., in order to effectively apply the filler material evenly and symmetrically.

Regarding claims 2 and 8, both Fraser et al. and Saltzman et al. disclose that their repairing processes could be used for any type of component. Clearly a transition duct or a component having a cooling hole is well known. Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have repaired a transition duct or component having a cooling hole, in order to repair the component.

Regarding claim 3, note that both Fraser et al. and Saltzman et al. teach repairing damage located near an area of spallation.

Regarding claim 11, Saltzman et al. teach powder (col. 2, lines 1-2).

Regarding claim 12, Fraser et al./Saltzman et al. teach the invention cited with the exception of the filler material comprising a yttria stabilized zirconia composition. However, the use of a particular filler material is considered an obvious matter of design choice depending upon the desired characteristics needed for the filler material. Also, official notice is taken that it was well known to a person of ordinary skill in the art, at the time of the invention, to have provided yttria stabilized zirconia composition for its strength characteristics. In addition see table in columns 8-9 which show that zirconia could be used.

Regarding claim 13, Fraser et al./Saltzman et al. teach the invention cited with the exception of the nozzle orifice being 1-2 mm and spreading powder at an angle of about 10 degrees at the time of the invention, it would have been an obvious matter of design choice to a

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person of ordinary skill in the art, to have used a nozzle orifice being 1-2 mm and spreading powder at an angle of about 10 degrees because applicant has not disclosed that a nozzle orifice being 1-2 mm and spreading powder at an angle of about 10 degrees provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected applicant's invention to perform equally well with either the nozzle orifice size taught by Saltzman et al. or the claimed orifice size because either orifice sizes perform the same function of coating equally well.

Regarding claim 14, the specific heat input of the micro-plasma torch does not further limit the claimed process, but rather these limitations define the apparatus used. In addition, under the principles of inherency, if a prior art device, in its normal and usual operation, would necessarily perform the method claimed, then the method claimed will be considered to be anticipated by the prior art device. When the prior art device is the same as a device described in the specification for carrying out the claimed method, it can be assumed the device will inherently perform the claimed process. *In re King*, 801 F.2d 1324, 231 USPQ 136 (Fed. Cir. 1986). Also, official notice is taken that was well known to a person of ordinary skill in the art, at the time of the invention to have used a heat input of about 2-5kJ/cm depending upon the filler material used.

Regarding claims 15-16, the grooves of Fraser et al./Saltzman et al. are completely filled and smoothed out, see for example figure 12 of Saltzman et al.

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8. **Claims 2 and 8** are alternatively rejected under 35 U.S.C. 103(a) as being unpatentable over Fraser et al. in view of Saltzman et al. as applied to claim 1 above, and further in view of Applicant's Admitted Prior Art [AAPA] (figure 1).

Fraser et al./Saltzman et al. do not specifically disclose have repairing a transition duct or component having a cooling hole.

[AAPA] teaches in figure 1 a transition duct/component with a cooling hole in need of repair.

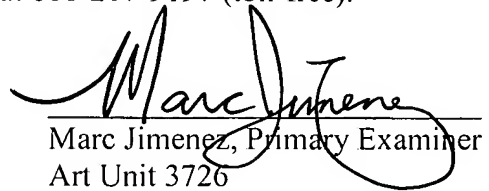
Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have provided the invention of Fraser et al./Saltzman et al. with repairing a transition duct or component having a cooling hole, in light of the teachings of [AAPA], in order to repair the component.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc Jimenez whose telephone number is (571) 272-4530. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Nguyen can be reached on (571) 272-4491. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Marc Jimenez, Primary Examiner
Art Unit 3726

MJ

2-23-06